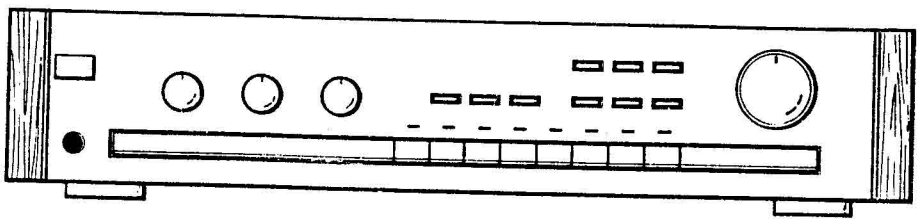
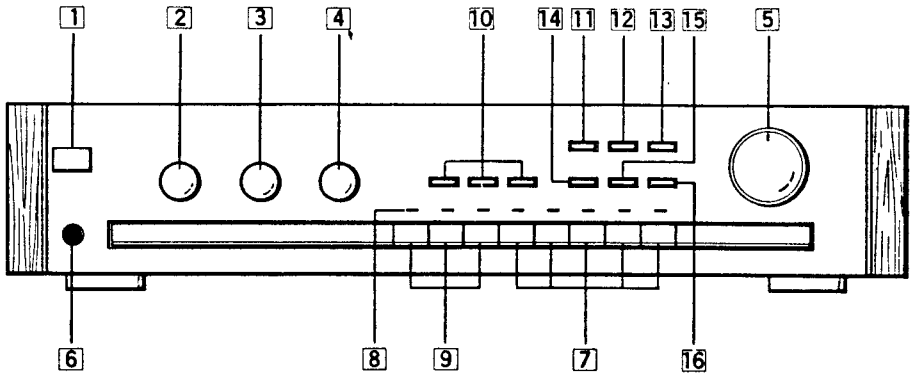
SERVICE
MANUAL

PA200

STEREO PRE AMPLIFIER



FRONT PANEL FEATURES



1. POWER SWITCH

Press to ON position to turn on the pre-amplifier. Upon power up, a muting circuit presents a short delay in order to suppress the sometimes annoying sound present at switch-on.

2. 3. BASS AND TREBLE CONTROLS

Use these controls to adjust the bass and the treble. If you turn the bass control clockwise from its center position, you will be able to emphasize the sound in the low-frequency range. Conversely, turning the bass control counter clockwise from the center position, you will attenuate the sound.
Use the treble control to adjust the sound in the high-frequency range in the same manner.

4. BALANCE CONTROL

Use this control to balance the volume of the left and right channels.

5. VOLUME CONTROL

Use this control to adjust the output level to the speakers and headphones. Turn it clockwise to increase the output level. No sound will be heard if you set it to "o".

6. HEADPHONE JACK

Plug the headphones into this jack when you want to listen through your stereo headphones.
Besure to turn down the volume level before plugging in the headphones. Turn up the volume level to a comfortable listening level once the headphonese are adjusted.

7. FUNCTION SELECTOR

Use this selector to select the program source. When set, the function indicator above the panel corresponding to the position of the function selector will light up.

CD: Select when you wish to listen to a Compact Disc Player.

AUX: Select when listening to a program source which is conected to the AUX jacks.

TUNER: Select when listening to radio broadcasts from the tuner.

PHONO 1, 2: Select either Phono 1 or Phono 2 when playing a record on the corresponding turn-table.

8. FUNCTION INDICATORS

The CD, AUX, TUNER, PHONO 1, 2 function indicators light up in accordance with the position of the function selector.

9. TAPE MONITOR SWITCH

Use these buttons to select the program source which is being reproduced.

TAPE 1: Select to monitor a recording or a tape being played back on the tape deck which is connected to the TAPE 1 jacks.

TAPE 2: Select to monitor a recording or a tape being played back on the tape deck which is connected to the TAPE 2 jacks.

OFF: Select whenever you are not playing back a tape or monitoring a recording.

10. TAPE COPY SWITCH

Use these switches when using two tape decks to copy recorded tapes or edit tapes. This switch is otherwise kept at the OFF position.

TAPE 1 ▶ 2: When playing back the tape on a deck connected to the TAPE 1 jacks and recording (copying) on a deck connected to the TAPE 2 jacks.

TAPE 2 ▶ 1: When playing back the tape on a deck connected to the TAPE 2 jacks and recording (copying) on a deck connected to the TAPE 1 jacks.

OFF: Set to this position when not copying.

11. MUTE SWITCH

Set this switch to – 20dB to attenuate the audio output indicated by the volume control by 20dB.

12. SUBSONIC FILTER SWITCH

When depressed, the subsonic filter (20Hz cut-off) reduces turn-table rumble, record warp noise and other ultra low frequency noise.

13. LOUDNESS SWITCH

This compensates for human hearing characteristics by boosting the bass and treble response at low volume listening levels to achieve a more pleasing tone balance.

14. TONE SWITCH

Set this switch to ON when adjusting the bass and treble controls. When set to OFF, the tone control circuits are disengaged and frequency response is flat. This function is convenient for checking phono cartridge and speaker tone quality and listening room acoustics.

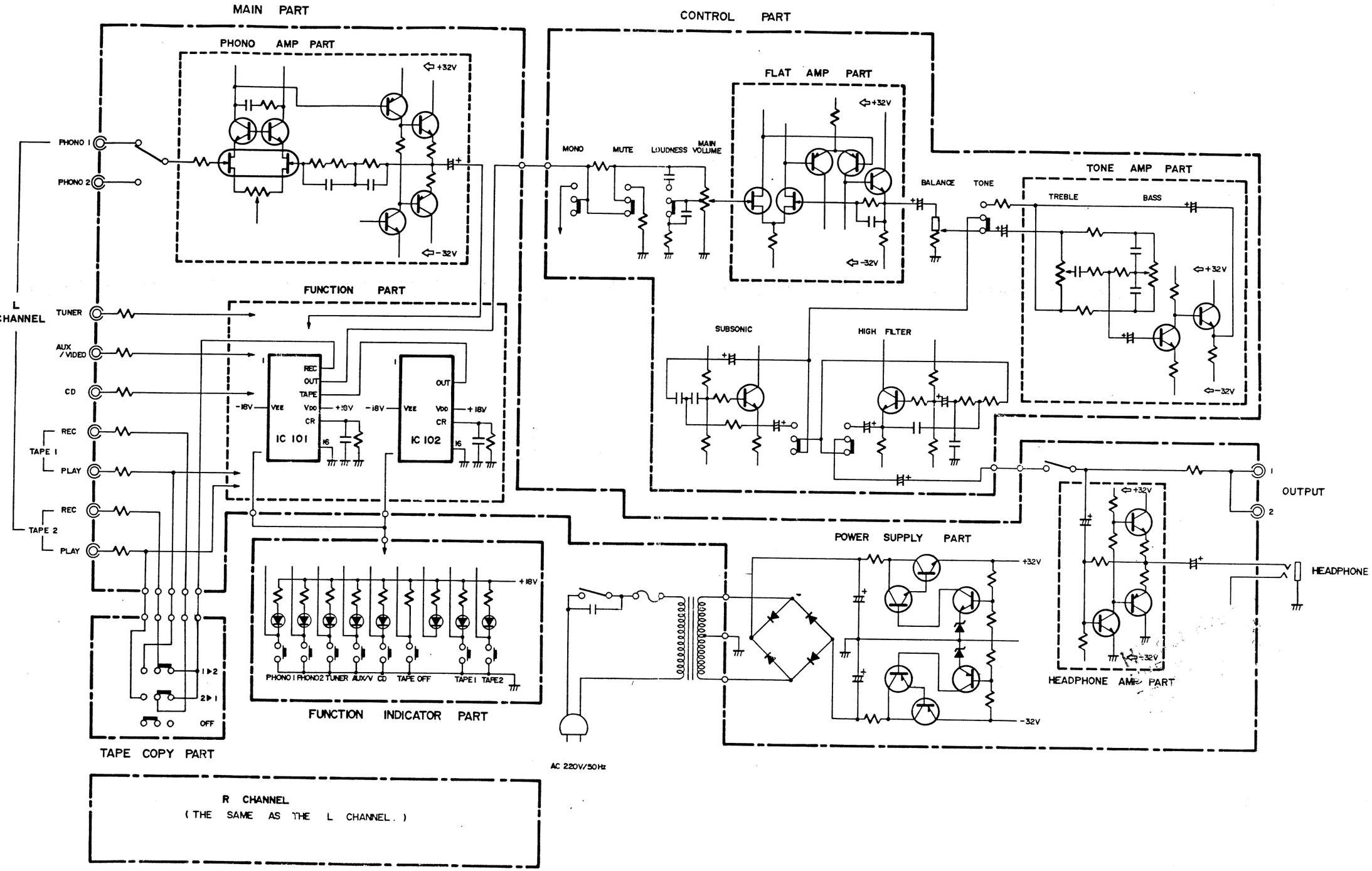
15. HIGH FILTER SWITCH

The high filter with a cut-off frequency of 8kHz is actuated when this switch is set to the 8kHz position.
The high filter serves to attenuate frequencies higher than 8kHz in a 12dB/oct slope. This is why it is effective in suppressing high-frequency noise or noise from scratches on records being played.

16. MONO

The sound from the L channel and R channel is mixed, and heard from both left and right speaker systems. Apart from playing back monaural sources, this switch is useful for checking the phase of the speaker system and volume balance.

BLOCK DIAGRAM



SCHEMATIC DIAGRAM

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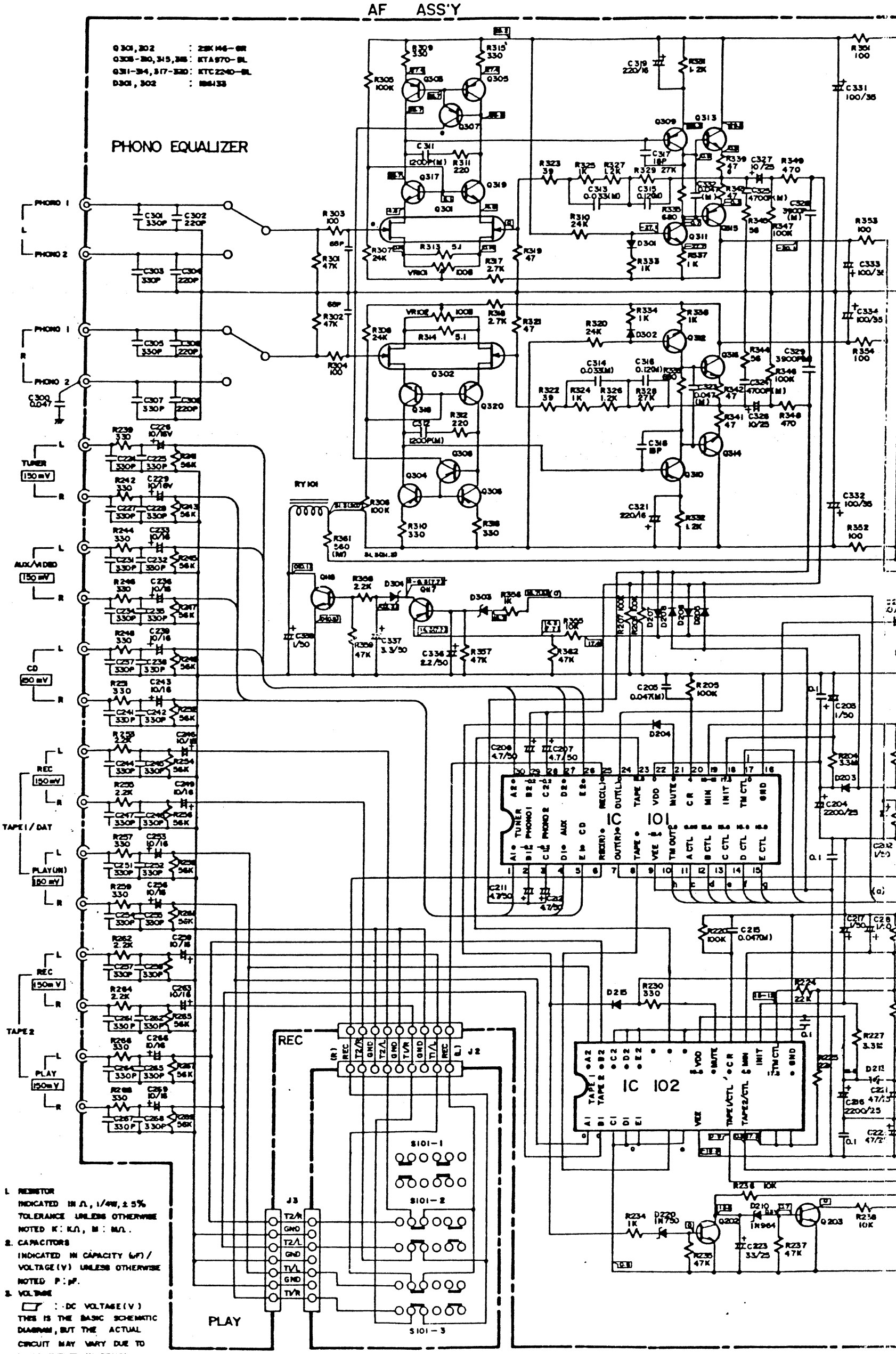


FLAT AMP

S501-1 : MONO OFF ON
S501-2 : MUTE OFF ON
S501-3 : LOUDNESS OFF ON
VR101 : MAIN 100KA

Q501-504 : 2SK117-GR/KTK167-GR/Y
Q505-508 : KTA970-GR
Q509,510 : KTD880-Y/O

VR103 : TREBLE
VR104 : BASS 100KB X2

S701 : SUBSONIC FILTER OFF ON
S702 : HIGH FILTER OFF ON

Q107 : KTA817-Y
Q108 : KTC1627-Y

D217 : KLR RED
D218,219,221-225 : KLG GREEN

IC 101 : LC7848
Q201-Q203,118 : KTC1815-GR/Y
Q202 : KTA1015-GR/Y
D210 : IN750A(4.7V)
D211, 105 : IN964B(13V)

D216 : IN755A(7.5V)
D201,211,214 : IN967 (18V)
D203-206 : IN4148
D213,215 : IN4148
D108,401,402 : IN4148
D301,302 : IN4148

S601-1 : TONE ON OFF
S601-2 : SUBSONIC ON OFF
S601-3 : HIGH FILTER ON OFF
S601-604,701-702 : KTC2240-GR
Q703,704 : KTC2240-BL

Q101,403,404 : KTD880-Y/O
Q102,405,406 : KTB834-Y/O
Q103,105,401,402 : KTC2240-BL/GR
Q104,106 : KTA970-BL/GR
Q107 : KTA817-Y/O
Q108 : KTC1627-Y/O

D101-104,107,208 : IN4002
D105,106,303 : IN5688(20V)
D304 : IN752A(5.6V)

POWER TRANS
2-131-263-01

POWER SWITCH
220V F101 T30mA/250V
110V F102 T500mA/250V
S102
S101
VOLTAGE SELECTOR SWITCH

FLAT AMP

S501-1 : MONO OFF ON
S501-2 : MUTE OFF ON
S501-3 : LOUDNESS OFF ON
VR101 : MAIN 100KA

Q501 - 504 : 2SK117-GR/KTK117-GR/Y
Q505 - 508 : KTA970-GR
Q509, 510 : KTD880-Y/O

VR103 : TREBLE
VR104 : BASS 100KB X 2

S701 : SUBSONIC FILTER OFF ON
S702 : HIGH FILTER OFF ON

Q107 : KTA817-Y
Q108 : KTC1627-Y

D 217 : KLR RED
D 218, 219, 221-225 : KLG GREEN

Q101, 403, 404 : KTD880-Y/O
Q102, 405, 406 : KTB834-Y/O
Q105, 105, 401, 402 : KTC2240-BL/GR
Q104, 106 : KTA970-BL/GR
Q107 : KTA817-Y/O
Q108 : KTC1627-Y/O

D101-104, 107, 208 : 1N4002
D105, 106, 303 : 1N5668(20V)
D304 : HZ752A(5.6V)

POWER TRANS
2-131-263-01

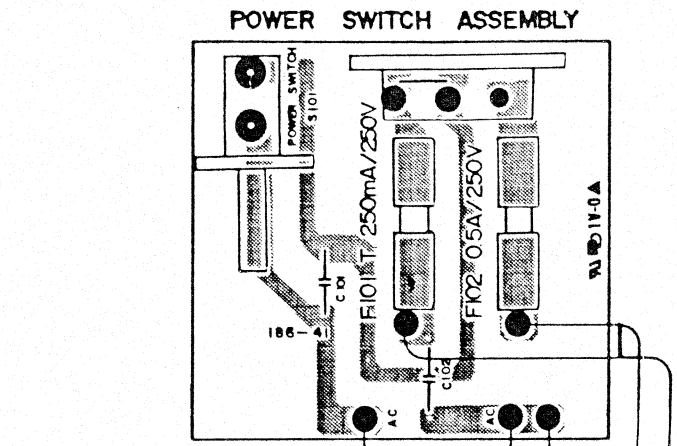
POWER SWITCH
VOLTAGE SELECTOR SWITCH

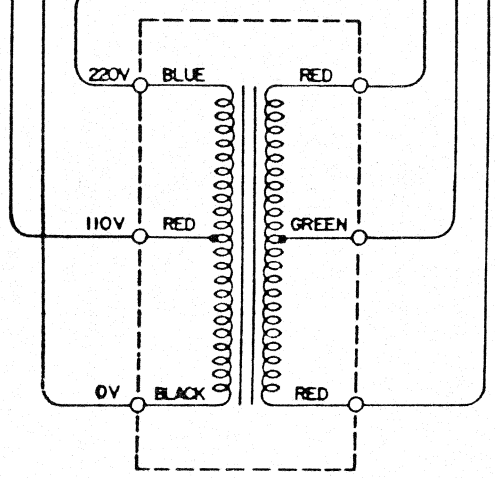
PHONES
J6
330P X 2

OUT
L1
L2
R1
R2

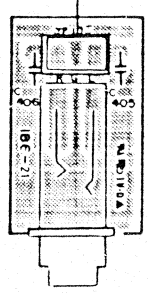
TAPE 2 TAPE1 TAPE ON/OFF CD AUX TUNER PHONO2 PHONO1

WIRING DIAGRAM

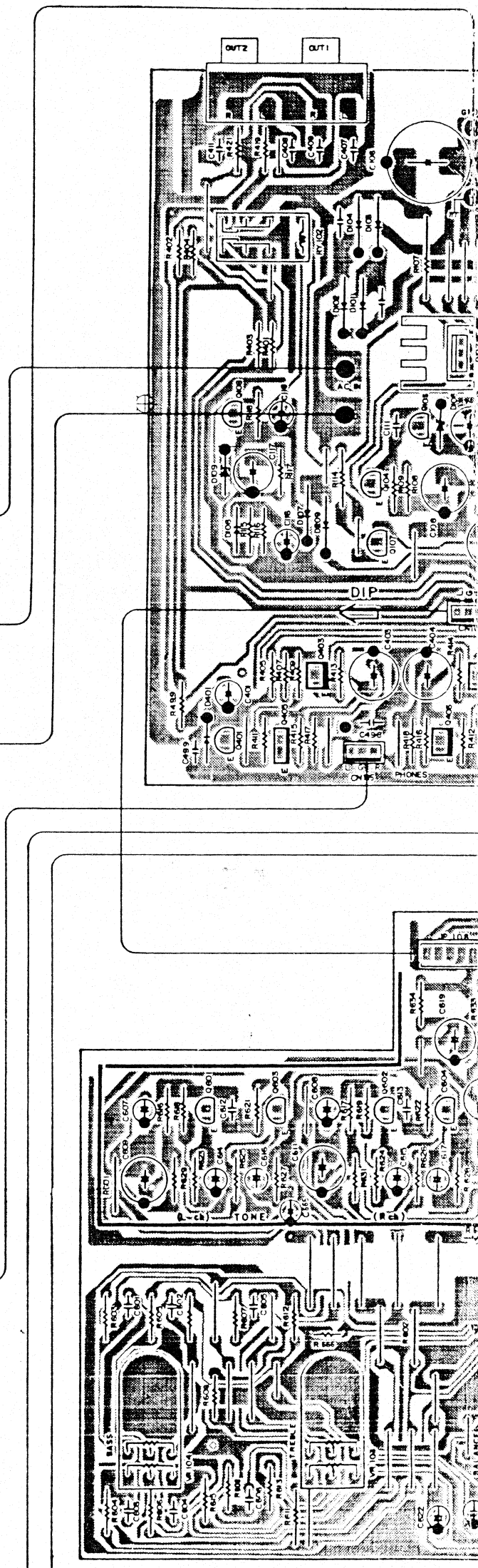




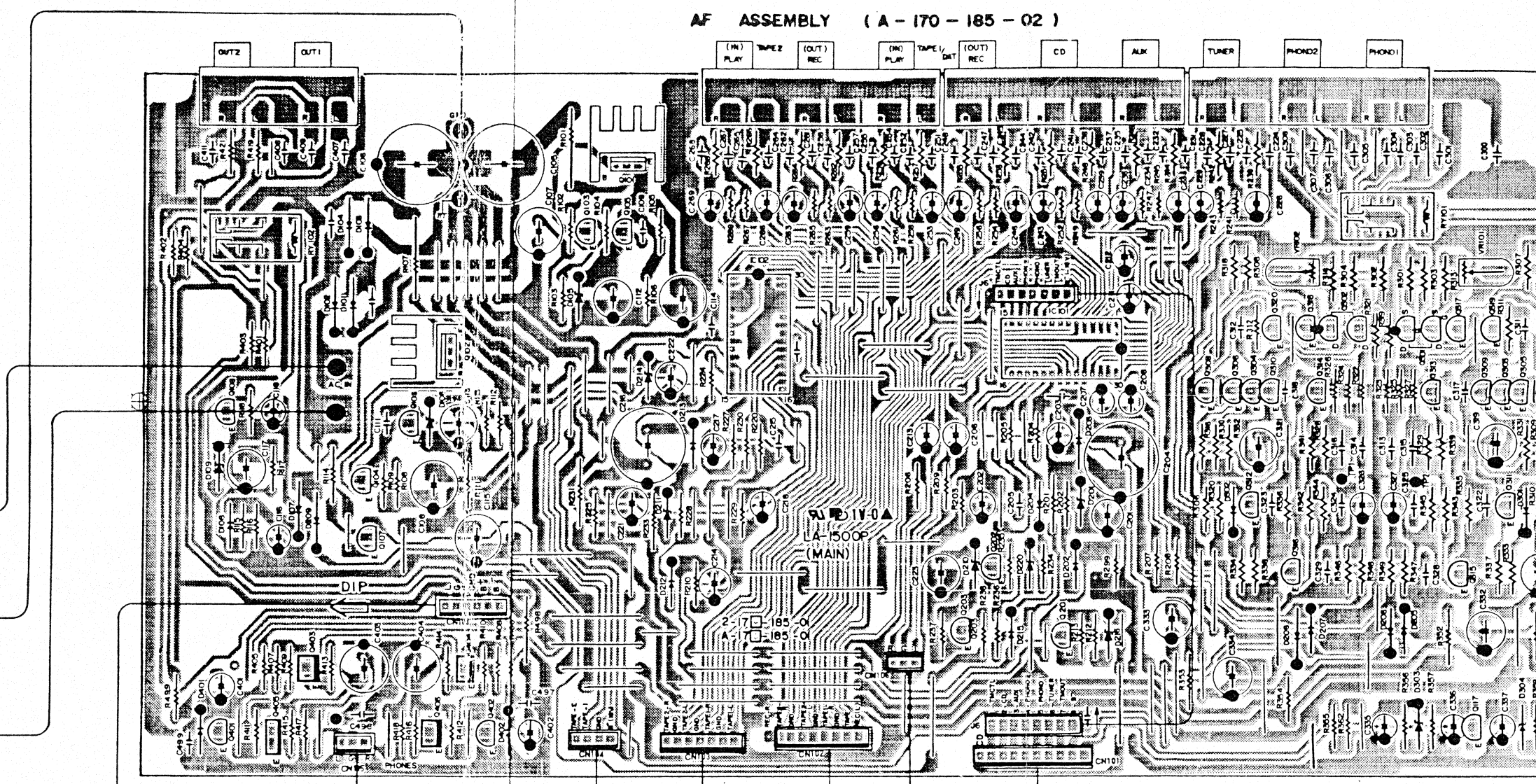
POWER TRANSFORMER
2-131-262-02



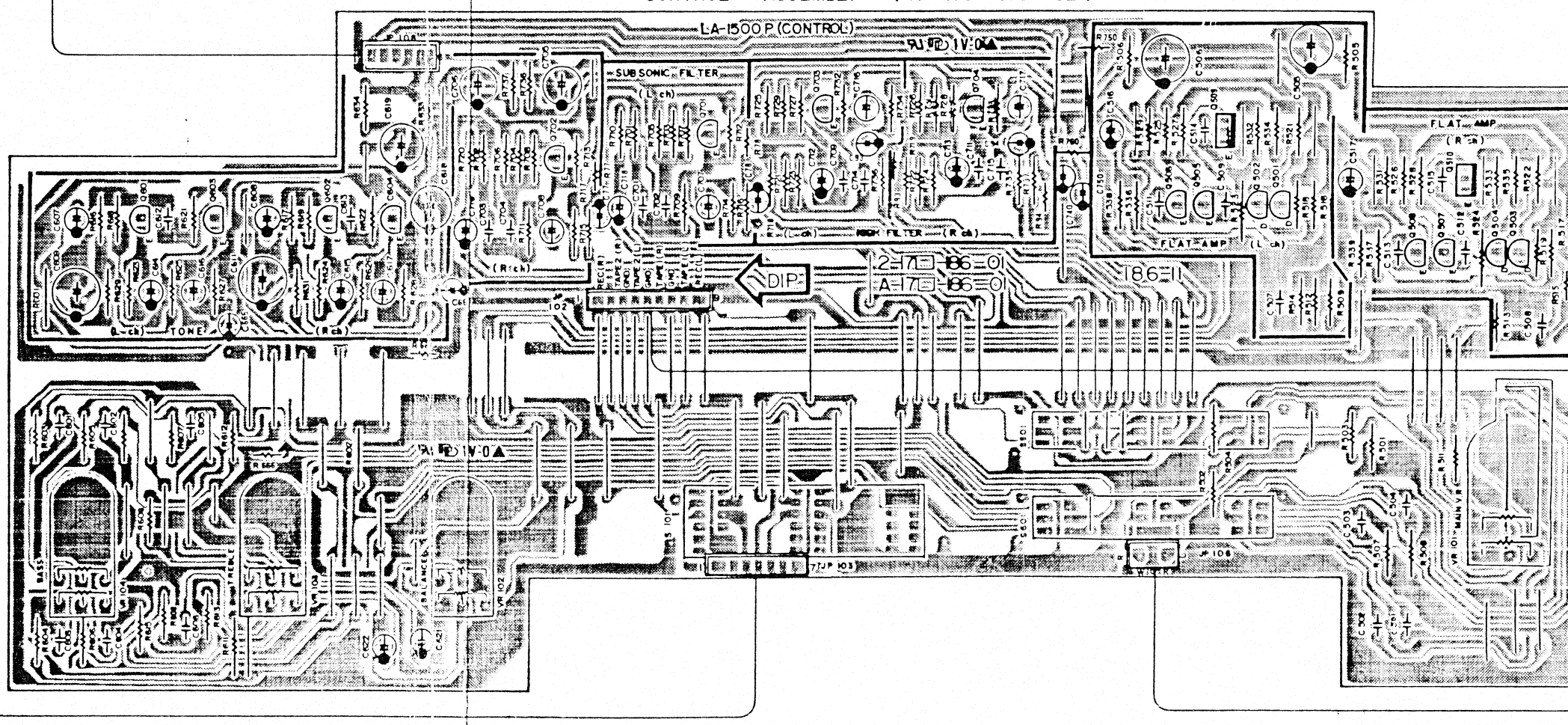
HEAD PHONE



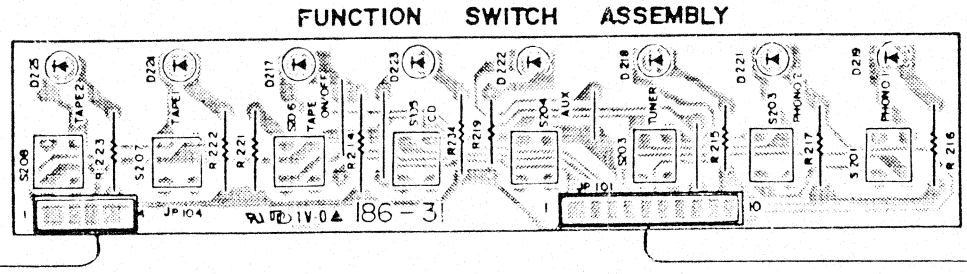
AF ASSEMBLY (A - 170 - 185 - 02)



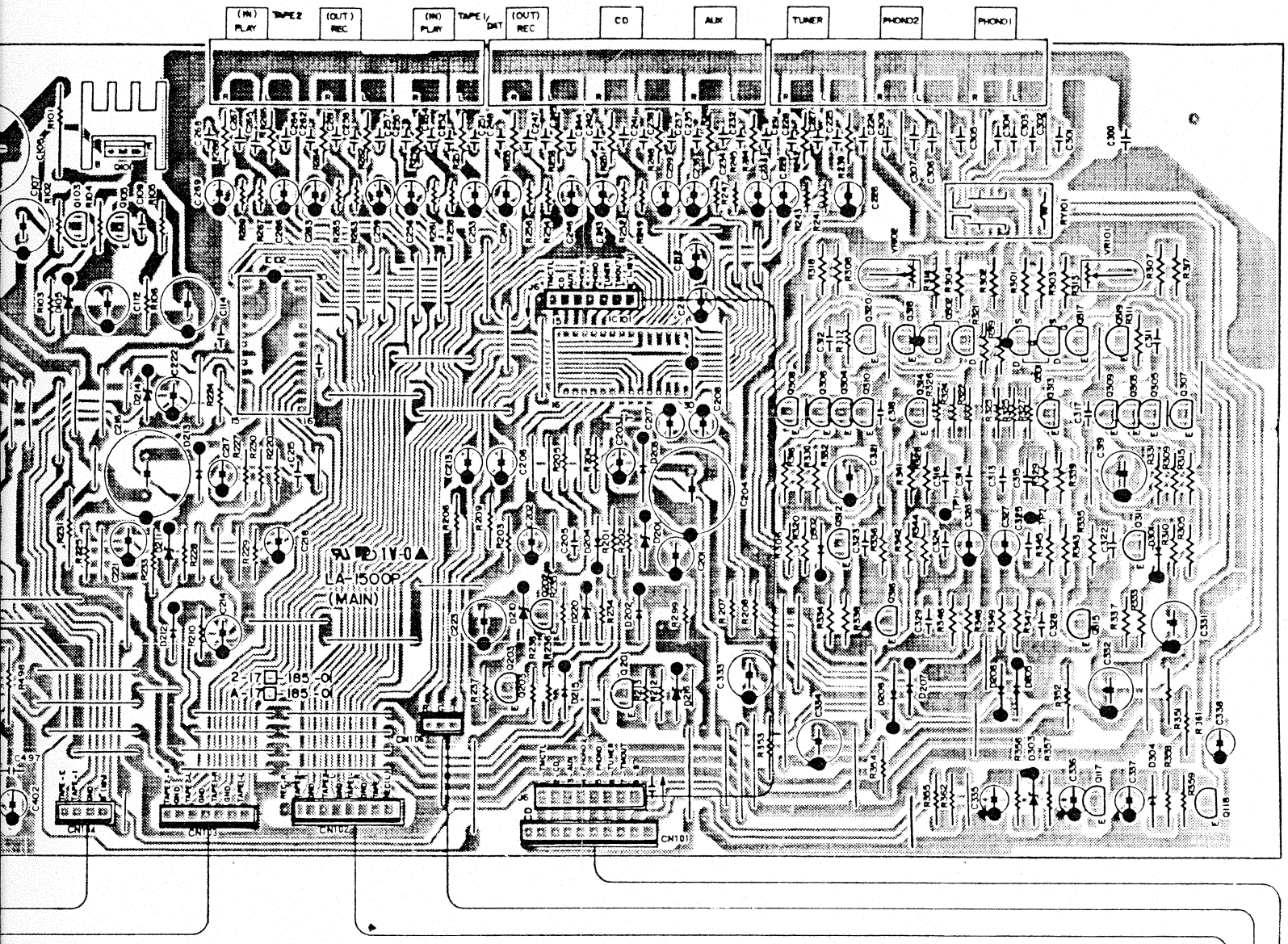
CONTROL ASSEMBLY (A - 170 - 186 - 02)



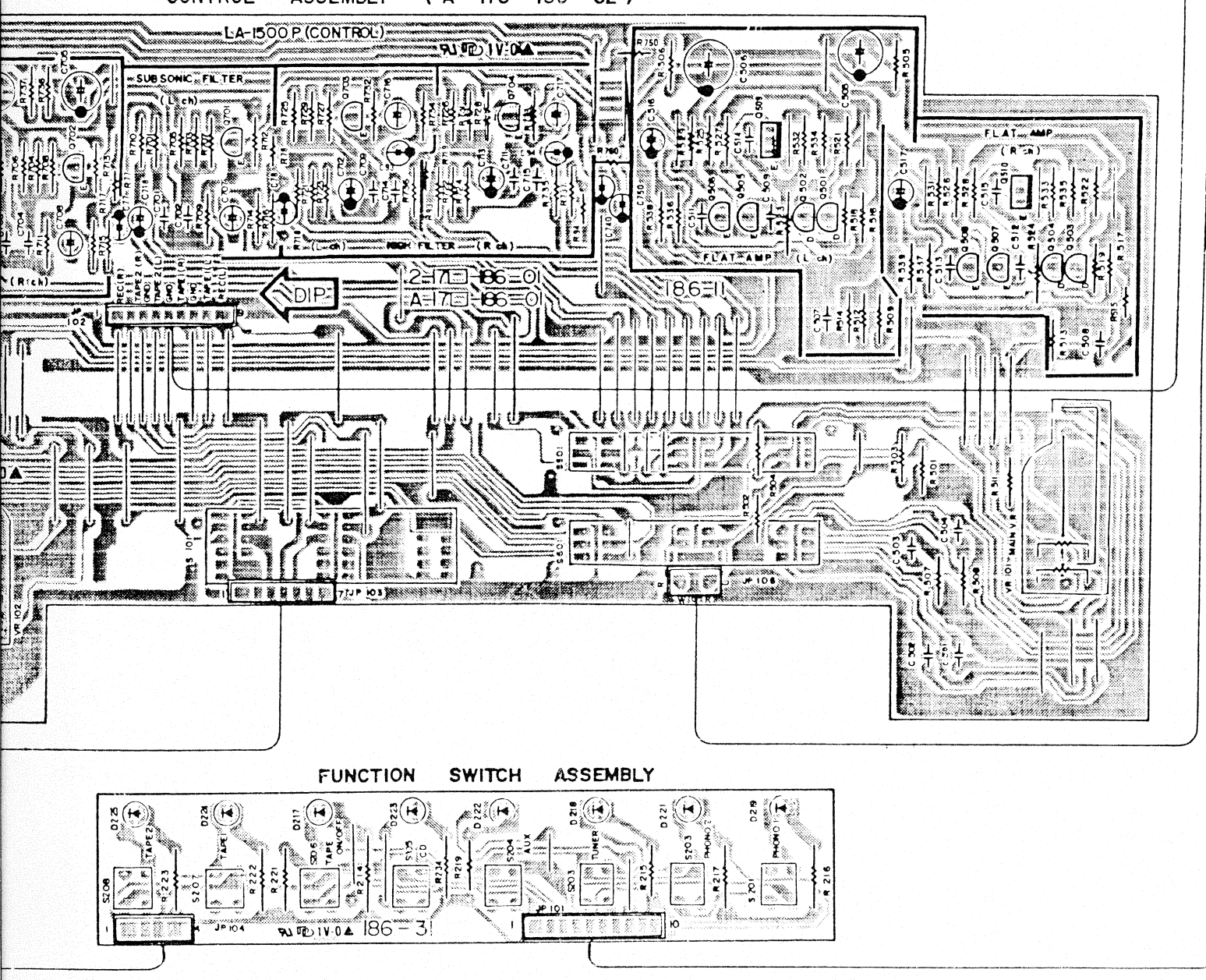
FUNCTION SWITCH ASSEMBLY



AF ASSEMBLY (A - 170 - 185 - 02)



CONTROL ASSEMBLY (A - 170 - 186 - 02)



FUNCTION SWITCH ASSEMBLY

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